

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 11-039852

(43)Date of publication of application : 12.02.1999

(51)Int.Cl.

G11B 33/02
B60R 11/02
G09F 9/00

(21)Application number : 09-210010

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(22)Date of filing : 18.07.1997

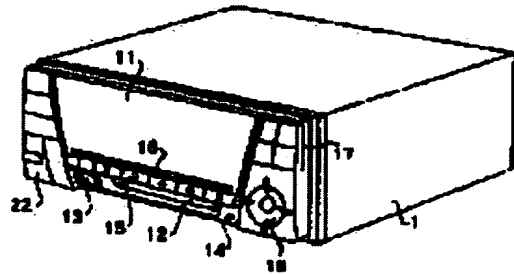
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(54) ONBOARD AUDIO APPLIANCE

(57)Abstract:

PROBLEM TO BE SOLVED: To operate a plurality of audio modes with a small count of operation buttons and effectively use an operation face by setting two insertion openings for media at the side of the operation face of an appliance main body storing an audio unit, and moving a lid thereby shutting one insertion opening and exposing the other insertion opening.

SOLUTION: In order to listen to an MD, a lid 11 having an operation input display area 16 and an operation input part 15 at a lower part is held at an upper position. A CD insertion opening is shut by an upper part of the lid 11, and an MD insertion opening 12 is exposed at the lower part. In association with the movement of the lid 11, the operation input part 15 is switched to an MD operation mode, and a guidance for an MD input operation is displayed at the operation input display area 16. In order to listen to a CD, the lid 11 is held at a lower position, whereby the CD insertion opening is exposed at the upper part of the lid 11 and the MD insertion opening 12 is shut by the lower part. Interlockingly, the operation input part 15 is switched to a CD operation mode and a guidance for a CD input operation is displayed at the operation input display area 16.



LEGAL STATUS

[Date of request for examination]

15.06.2004

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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CLAIMS

[Claim(s)]

[Claim 1] Audio equipment for mount characterized by providing the lid on which the medium charging hole of another side is exposed while plugging up one medium charging hole of the 1st and 2nd medium charging holes where the magnitude prepared in said actuation side side of the body of a device equipped with the actuation side while holding the audio unit, and this body of a device differs, and these 1st and 2nd medium charging holes.

[Claim 2] A lid is audio equipment for mount according to claim 1 characterized by being movable between the 1st location which plugs up the 1st medium charging hole, and the 2nd location which plugs up the 2nd medium charging hole, and being held in said 1st and 2nd locations.

[Claim 3] A lid is audio equipment for mount according to claim 2 characterized by providing a display means to display the 1st screen corresponding to the medium inserted in the 2nd medium charging hole in the 1st location, and to display the 2nd screen corresponding to the medium inserted in the 1st medium charging hole in the 2nd location.

[Claim 4] Audio equipment for mount according to claim 3 characterized by providing a change means to perform the change of the 1st screen and the 2nd screen when a lid is held in the 1st location or 2nd location.

[Claim 5] Audio equipment for mount according to claim 3 or 4 characterized by providing the actuation input section which can perform the input corresponding to the medium inserted in the 1st medium charging hole when the input corresponding to the medium inserted in the 2nd medium charging hole when a lid was held in the 1st location can be performed and a lid is held in the 2nd location.

[Claim 6] A lid is audio equipment for mount according to claim 1 to 5 characterized by having the abbreviation trapezoid configuration where the side which takes up the one where the 1st medium charging hole and the 2nd medium charging hole are larger is a long side, and the side which takes up the one where the 1st medium charging hole and the 2nd medium charging hole are smaller is a shorter side.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the audio equipment for mount carrying CD (compact disk) player, radio, a cassette, MD (mini disc) player, etc.

[0002]

[Description of the Prior Art] In recent years, in addition to CD, MD has spread quickly, and MD is carried also in the audio equipment for mount (car audio). Therefore, in addition to radio and a cassette, in a car audio, CD and MD are operated increasingly.

[0003]

[Problem(s) to be Solved by the Invention] As mentioned above, in addition to radio and a cassette, CD and MD are operated in a car audio, and manual operation buttons increase in number in connection with it. That is, the manual operation buttons for MD other than the manual operation button for the radio with which the conventional car audio for mount is equipped, a cassette, and CD increase in number. Therefore, since the area of an actuation side is restricted by specification, the space factor of the manual operation button in an actuation side will become large inevitably. Moreover, since there are many manual operation buttons, actuation will become complicated.

[0004] This invention is made in view of this point, two or more audio modes with few manual operation buttons can be operated, and it aims at offering the audio equipment for mount which can use an actuation side effectively.

[0005]

[Means for Solving the Problem] In order to solve the above-mentioned technical problem, this invention provided the following means. Invention according to claim 1 takes the configuration possessing the lid on which the medium charging hole of another side is exposed while plugging up one medium charging hole of the 1st and 2nd medium charging holes where the magnitude prepared in said actuation side side of the body of a device equipped with the actuation side while holding the audio unit, and this body of a device differs, and these 1st and 2nd medium charging holes.

[0006] Since a lid is sharable also to the medium (henceforth the 2nd medium) inserted in the 2nd medium charging hole also to the medium (henceforth the 1st medium) inserted in the 1st medium charging hole according to this configuration, an actuation side can be used effectively. Here, the 1st medium and the 2nd medium mean two media by which magnitude differs, for example, CD and MD can be mentioned.

[0007] In invention according to claim 1, invention according to claim 2 has a movable lid between the 1st location which plugs up the 1st medium charging hole, and the 2nd location which plugs up the 2nd medium charging hole, and takes the configuration held in said 1st and 2nd locations.

[0008] According to this configuration, the 1st and 2nd media can be easily inserted in from each charging hole.

[0009] In invention according to claim 2, a lid displays the 1st screen corresponding to the medium inserted in the 2nd medium charging hole in the 1st location, and invention according to claim 3 takes the configuration possessing a display means to display the 2nd screen corresponding to the medium inserted in the 1st medium charging hole in the 2nd location.

[0010] In invention according to claim 3, when a lid is held in the 1st location or 2nd location, it is desirable to provide a change means to perform the change of the 1st screen and the 2nd screen.

[0011] Moreover, when the input corresponding to the medium inserted in the 2nd medium charging hole when a lid was held in the 1st location can be performed and a lid is held in the 2nd location, as for invention according to claim 3, it is desirable to provide the actuation input section which can perform the input corresponding to the medium inserted in the 1st medium charging hole.

[0012] According to these configurations, the display screen to the 1st medium and 2nd medium can be expressed as one display means, and actuation according to a medium which is different with the same manual operation button can be performed. Therefore, it becomes possible to make the space factor of the manual operation button in an actuation side as small as possible. Thereby, the number of manual operation buttons can be decreased and complicated alter operation can be avoided.

[0013] In invention according to claim 1 to 5, the side with which a lid takes up the one where the 1st medium charging hole and the 2nd medium charging hole are larger is a long side, and invention according to claim 6 takes the configuration which has the abbreviation trapezoid configuration where the side which takes up the one where the 1st medium charging hole and the 2nd medium charging hole are smaller is a shorter side.

[0014] According to this configuration, while the lid of an abbreviation trapezoid configuration can fully close the 1st

and 2nd medium charging holes, the space factor of the lid in an actuation side can be made small with it. Therefore, the manual operation button in an actuation side can be enlarged, and alter operation can be made easy.

[0015]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained to a detail with reference to an accompanying drawing. Drawing 1 is the perspective view showing the audio equipment for mount concerning 1 operation gestalt of this invention. The body 1 of a device carries the audio unit equipped with various audio systems and navigation systems. The actuation side 2 where a driver performs various actuation is established in the front-face [of the body 1 of a device], i.e., driver, side.

[0016] On the body 1 of a device, it has the display housing 3, and the display 4 for image display is contained possible [receipts and payments] in the display housing 3. This display 4 is equipped with the delivery foot (not shown) which was prepared in the display housing 3 and which it lets out and lets out with a means (not shown). This delivery foot is attached in the display 4 through a rocking means by which the sense of the screen of a display 4 is changeable. Moreover, the rocking means is equipped with a fixed means to fix display 4 screen.

[0017] Therefore, in using a display 4, first, by letting out a delivery foot for the display 4 contained by the display housing 3 with a delivery means, it takes out outside, and a user rocks a display 4 and fixes a screen to a legible location after that. In addition, the display 4 is electrically connected to the navigation system within the body 1 of a device.

[0018] The actuation side 2 has structure as shown in drawing 2. Drawing 2 is drawing showing the condition that the lid is held in the 1st location which has plugged up the charging hole of CD which is the 1st medium.

[0019] The surface is long in the center section of the actuation side 2, and the lid 11 which has the abbreviation isosceles trapezoid configuration where the lower side is short is attached in it possible [vertical movement]. In the condition which shows in drawing 2, a lid 11 plugs up the charging hole of CD which is the 1st medium, and as it exposes to the external world the charging hole 12 of MD which is the 2nd medium, it is held by the maintenance means which is not illustrated. Moreover, the display which performs the display corresponding to each audio mode is attached in the lid 11. This display is electrically connected with the audio unit held in the body 1 of a device.

[0020] The MD eject button 13 is formed beside the MD charging hole 12 (space left-hand side). This MD eject button 13 can operate in the condition shown in drawing 2, i.e., the condition that CD charging hole was plugged up, and where the MD charging hole 12 is plugged up, it serves as actuation impossible.

[0021] Moreover, the mode circuit changing switch 14 which can switch audio mode is formed beside the MD charging hole 12 (space right-hand side). That is, in the condition which shows in drawing 2, the mode circuit changing switch 14 is in an OFF condition, and it is set up so that it may become MD mode at this time. Moreover, if the mode circuit changing switch 14 is pressed down while a lid 11 descends and exposing CD charging hole, the mode circuit changing switch 14 will be in ON condition, and will serve as CD mode at this time.

[0022] The actuation input section 15 for performing actuation in CD mode or MD mode is formed in the lower part of a lid 11. This actuation input section 15 enables the actuation input in MD mode, when the mode circuit changing switch 14 is in an OFF condition, and when the mode circuit changing switch 14 is in ON condition, it enables the actuation input in CD mode.

[0023] The actuation input viewing area 16 is formed in the lower part of the display of a lid 11, and the display to which it shows the actuation input in CD mode or MD mode is made. This annunciator is performed by ON/OFF of the mode circuit changing switch 14 corresponding to each mode.

[0024] The other actuation input sections are prepared in the both sides of a lid 11. The audio mode change carbon button 17 which switches CD mode, MD mode, TV mode, and NAVI mode to right-hand side as ***** of a lid 11 in the upper part is formed. In addition, about the change in CD mode and MD mode, the mode circuit changing switch 14 mentioned above has priority over the input of the audio mode change carbon button 17. Moreover, an input of the switch in TV mode and NAVI mode displays an image on a display 4.

[0025] In NAVI mode, the NAVI mode switch 18 for operating it is formed in the lower part of the audio mode change carbon button 17. the NAVI mode switch 18 is quadrisected — having — **** — the input of each switch — for example, a detail, a wide area, and a its present location — it returns — an actuation change [like] is possible.

[0026] On the other hand, the CD eject button 19 which can take CD in and out is formed in left-hand side from the top as ***** of a lid 11. This CD eject button 19 can operate, where MD charging hole is plugged up, and where the CD charging hole 12 is plugged up, it serves as actuation impossible.

[0027] In the bottom of the CD eject button 19, the button selector 23 for the FUNCTION carbon button 21 for the DISP carbon button 20 for switching a display pattern and an AM/FM change, the VOL carbon button 22 for controlling the volume, and the frequency regulation in radio mode is formed. Moreover, the SEL carbon button 24 for switching a bus, treble, and balance is formed in the VOL carbon button 22.

[0028] Next, the case where the audio equipment for mount of this invention is used is explained. First, in hearing MD, as shown in drawing 3, a lid 11 is raised and it holds in the up location of an actuation side. While CD charging hole is plugged up in the upper part of a lid 11 at this time, the MD charging hole 12 is exposed. Moreover, while a lid 11 goes up, it is pressed with a lid 11 and the mode circuit changing switch 14 which was in ON condition will be in an OFF condition. The display to which it shows the lower part of a display to the alter operation in MD mode by it being interlocked with that the mode circuit changing switch 14 will be in an OFF condition, and the mode of the actuation input section 15 turning into MD mode, for example, TITLE, UP, TITLE DOWN, RANDOM, SCAN, REPEAT, etc. are made.

[0029] And MD is inserted in from the MD charging hole 12, and MD mode is operated by the input of the actuation input section 15 and the VOL carbon button 22. Moreover, MD is taken out from the MD charging hole 12 by pushing the MD eject button 13.

[0030] Next, in hearing CD, as shown in drawing 4, a lid 11 is dropped and it holds in the lower location of an actuation side. While the MD charging hole 12 is closed by the lower part of a lid 11 at this time, the CD charging hole 25 is exposed. Moreover, while a lid 11 descends, it is released, and the mode circuit changing switch 14 which was in the OFF condition is pressed with a lid 11, and will be in ON condition. The display to which it shows the lower part of a display to the alter operation in CD mode by it being interlocked with that the mode circuit changing switch 14 will be in ON condition, and the mode of the actuation input section 15 turning into CD mode, for example, TRACK, UP, TRACK DOWN, RANDOM, SCAN, REPEAT, etc. are made.

[0031] And CD is inserted in from the CD charging hole 25, and CD mode is operated by the input of the actuation input section 15 and the VOL carbon button 22. Moreover, CD is taken out from the CD charging hole 25 by pushing the CD eject button 19.

[0032] On the other hand, in making it TV and NAVI mode, the audio mode change carbon button 17 is inputted, it expresses as a display 4, and the input of the VOL carbon button 22, a button selector 23, or the NAVI mode switch 18 performs TV actuation and NAVI actuation.

[0033] Since such audio equipment for mount of this invention can share a lid to the medium charging hole of the medium by which magnitude differs, an actuation side can be effectively used for it. Moreover, the display screen to two kinds of media can be expressed as one display means, and actuation according to a medium which is different with the same manual operation button can be performed. Therefore, it becomes possible to make the space factor of the manual operation button in an actuation side as small as possible. Thereby, the number of manual operation buttons can be decreased and complicated alter operation can be avoided.

[0034] In the above-mentioned operation gestalt, although the CD charging hole 25 is arranged in the upper part of an actuation side and the MD charging hole 12 is arranged in the lower part of an actuation side, the CD charging hole 25 may be arranged in the lower part of an actuation side, and the MD charging hole 12 may be arranged in the upper part of an actuation side.

[0035] In the above-mentioned operation gestalt, although the case where they are foot trapezoid configurations — the configuration of the surface of a lid 11 is longer than the lower side — is explained, in this invention, a limit may not be in the configuration of a lid 11, and the lower side may be a trapezoid configuration longer than the surface, and may be a rectangle configuration.

[0036] Moreover, when the mode circuit changing switch 14 is pressed with a lid 11 in the above-mentioned operation gestalt, it will be in ON condition, and when released, the case where it will be in an OFF condition is explained, but also when this invention will be in an OFF condition when the mode circuit changing switch 14 is pressed, and are released and it will be in ON condition, it can be applied [it is not limited to this, but].

[0037] Moreover, in the above-mentioned operation gestalt, although the case where MD is used as the 2nd medium is explained using CD as the 1st medium, the 1st medium may be MD, the 2nd medium may be CD, and the 1st and 2nd media may be the combination of MD and DVD (digital video disc), and the combination of CD and DVD.

[0038] Moreover, in the audio equipment for mount of this invention, the configuration of the actuation input section, magnitude, arrangement, etc. can be suitably chosen as arbitration.

[0039]

[Effect of the Invention] As explained above, the audio equipment for mount of this invention The 1st and 2nd medium charging holes where magnitude differs are established in the actuation side side of the body of a device equipped with the actuation side while holding the audio unit. Since the medium charging hole of another side is exposed while a lid closes one medium charging hole of these 1st and 2nd medium charging holes, two or more audio modes with few manual operation buttons can be operated, and an actuation side can be used effectively.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The perspective view showing the audio equipment for mount concerning 1 operation gestalt of this invention.

[Drawing 2] The front view showing the actuation side of the audio equipment for mount concerning the above-mentioned operation gestalt.

[Drawing 3] Drawing showing MD insertion condition of the audio equipment for mount concerning the above-mentioned operation gestalt.

[Drawing 4] Drawing showing CD insertion condition of the audio equipment for mount concerning the above-mentioned operation gestalt.

[Description of Notations]

- 1 Body of Device
- 2 Actuation Side
- 3 Display Housing
- 4 Display
- 11 Lid
- 12 MD Charging Hole
- 13 MD Eject Button
- 14 Mode Circuit Changing Switch
- 15 Actuation Input Section
- 16 Actuation Input Viewing Area
- 17 Audio Mode Change Carbon Button
- 18 NAVI Mode Switch
- 19 CD Eject Button
- 20 The DISP Carbon Button
- 21 FUNCTION
- 22 The VOL Carbon Button
- 23 Button Selector
- 24 The SEL Carbon Button
- 25 CD Charging Hole

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